OWNER'S MANUAL

TEAC®

A-3340S

4-Channel SIMUL-SYNC Stereo Tape Deck

51013391

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Congratulations. You now own a TEAC A-3340S 4-Channel Simul-Sync Tape Deck – the second generation of TEAC's famous Creator series. Owning a TEAC A-3340S is like having a recording studio at your command. It gives you four separate channels in one direction on which signals from eight different sources may be recorded simultaneously or one channel at a time – synchronously. Independent microphone and line inputs and outputs, each with their own level controls, provide virtually unlimited blending and mixing options. The sonic effects at your command are endless – and limited only by your imagination.

Developed and manufactured by TEAC Corporation, the Leaders in tape recording technology, the TEAC A-3340S will give you years of recording and listening pleasure if you continue to give to it the care and attention this deck received during its creation. To this end, we urge you to carefully read and use the contents of this Owner's Manual and the Open Reel Information Supplement. With a minimum of regular preventive maintenance and a respect for its limitations and capabilities, you will continue to enjoy the thrill of using and owning the TEAC A-3340S for many years.

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This tape deck has a Serial Number located on the rear panel. Please record the Model Number and Serial Number and retain them for your records.

Model Number _____.

Serial Number _____.

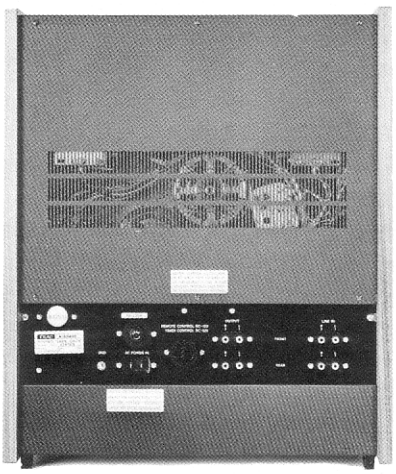
* "DOLBY" and the Double D symbol " DD " are trademarks of Dolby Laboratories, Inc.

About Installation

check these precautions before beginning to operate this deck

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

Caution: If you plan to use this deck in an area that has different A/C Power than that specified on the inspection tag (117V, AC, 60 Hz), please contact your local TEAC Service Center for conversion information.



Mounting position

This deck may be used in either the up-right or the horizontal position, however, the up-right position is preferred. For horizontal operation always attach the mounting spacers, furnished with the standard accessories, to protect the connections as well as to insure adequate ventilation.

About Service & Warranty

SERVICE

Our investigation has shown that approximately 40 % of the calls for service immediately after purchases resulted from improper operation of the equipment. Therefore, it is important that you thoroughly read and understand this manual before placing the unit in operation. Failure to properly clean your deck will result in degradation of performance. Careful observation of the cleaning and servicing hints contained in this manual will contribute to a lengthened, trouble-free unit life. Please consult the Corrective Action Guide chart before seeking service as most common problems are covered by this chart.

Should your tape deck need repair, contact the dealer where it was purchased or the nearest TEAC Authorized Service Center.

They can also secure accessories for you. Your new TEAC A-3340S Tape Deck has been manufactured under the strictest quality control procedures. Each unit has been thoroughly checked at the factory. Should any damage have been incurred during transit or should you have any doubts as to its performance, contact your dealer as soon as possible.

WARRANTY

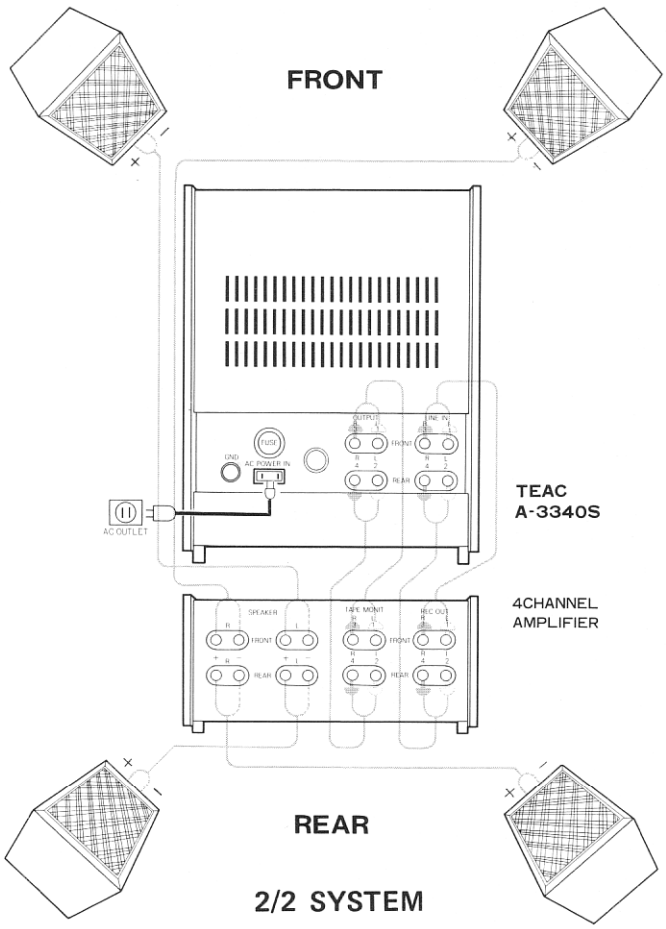
Please see the Warranty Card included with your deck.

Connection and speaker placement

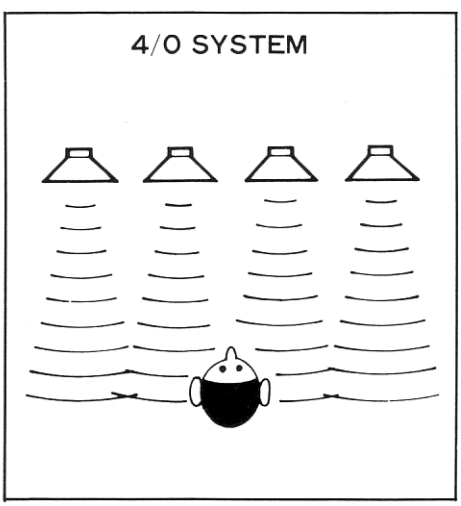
The A-3340S is a discrete, 4-channel stereo tape deck. For full utilization of all four channels, it must be used with two separate 2-channel amplifiers or, preferably, with one 4-channel stereo amplifier having separate, discrete inputs and outputs for each of the four channels. To maintain compatibility with standard, 2-channel stereo tapes, the channels are numbered to correspond with the tracks on the tape. They are further designated "FRONT" and "REAR" to identify them with normal microphone and speaker placement. Thus, channel 1 is front, L1; channel 2 is rear, L2; channel 3 is front, R3 and channel 4 is rear, L4. The LINE IN and OUTPUT jacks of the A-3340S should be connected to the corresponding jacks on the panel of the 4-channel amplifier.

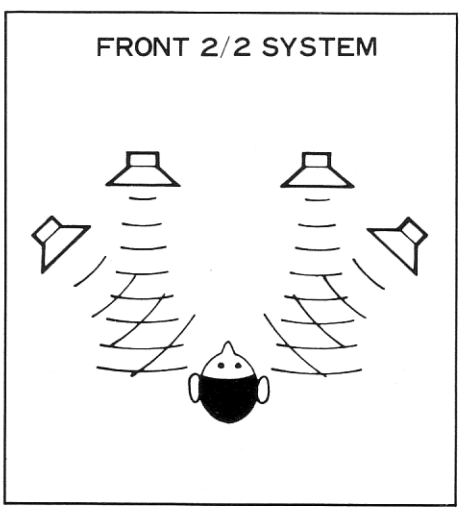
Important: If your 4-channel amplifier does not have a discrete output for 4-channel tape recorders with 4 separate jacks to correspond with the LINE IN jacks on the A-3340S, discrete 4-channel recording and playback from the deck cannot be expected.

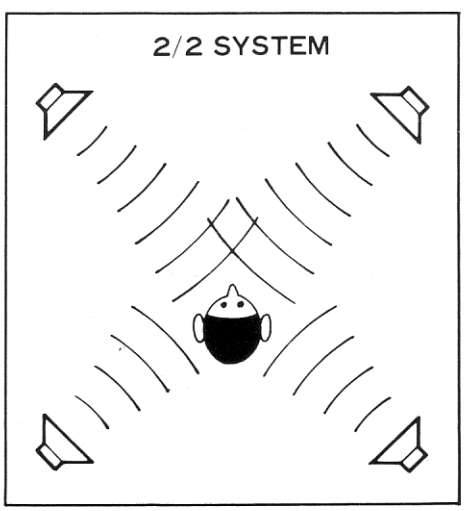
Speaker Placement



4-Track/4-Channel Connections

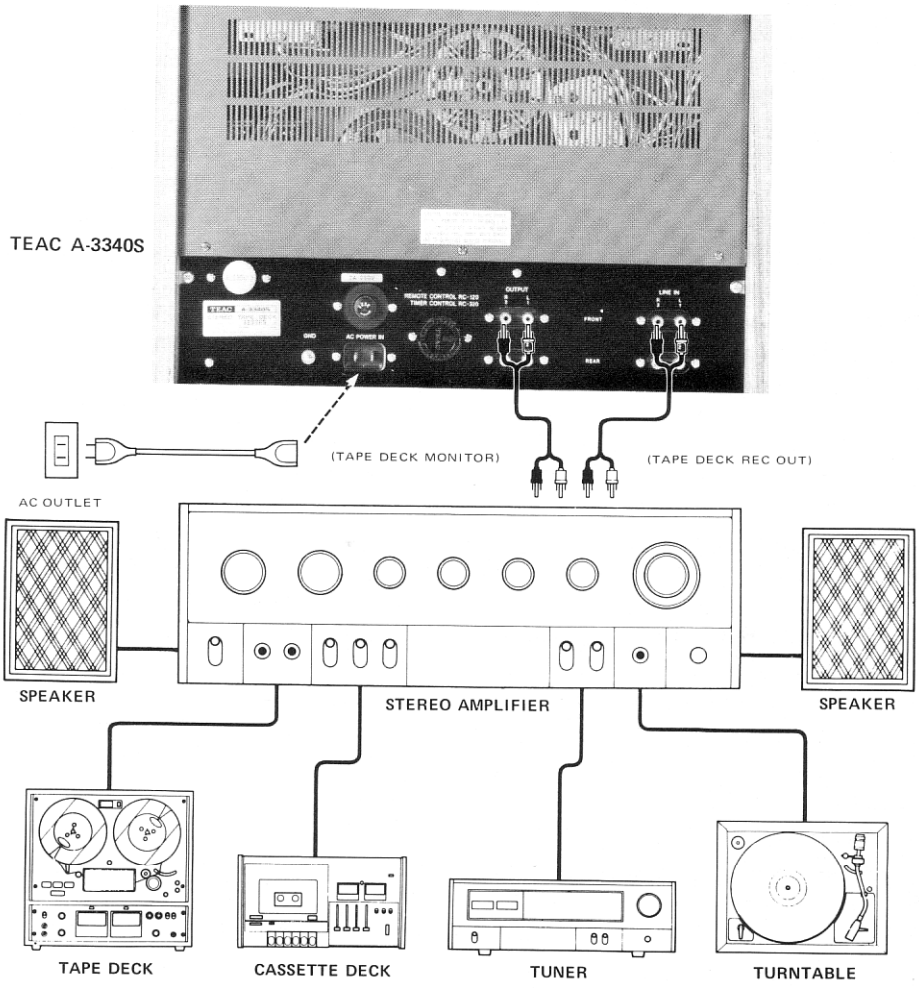






4-track/2-channel connections

If you wish to use the A-3340S as a conventional, 2-channel stereo tape deck, use the FRONT connections only (L1 & R3). Remember to place the PLAY switch on the front of the deck to the 2CHAN position and leave it there.



4-Track/2-Channel Connections

With Optional Units

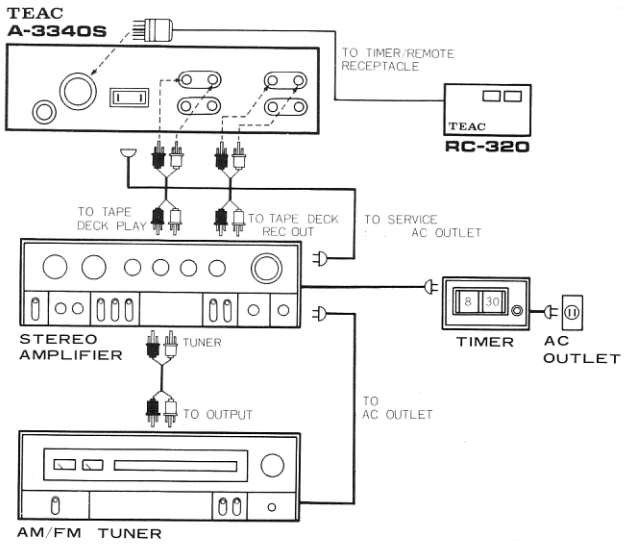
Remote controlled operation

TEAC's optional accessory RC-120 Remote Control Unit gives you total control over the A-3340S transport controls from up to 15 feet away. Even recording and PAUSE can be engaged from the comfort of your easy chair. Remove the dummy plug on the rear of the deck to install the RC-120 plug. This accessory may be left connected while you use the controls on the A-3340S.

Timer controlled operation

TEAC's optional accessory RC-320 Timer Control Adaptor will work with almost any electrical-switching clock timer to start recording (or playback) on the TEAC A-3340S at a preset time. Remove the dummy plug from the rear of the deck to connect the RC-320. Follow the instructions supplied with the RC-320. Remember to make all the preparations for recording and set the levels before setting the clock timer. You might also want to reduce the speaker volume level on your amplifier. This accessory may be left connected while using normal procedures with the A-3340S provided that both buttons on the RC-320 are disengaged (up).

CONNECTION:
TIMER CONTROLLED RECORDING



Full compatible playback

The A-3340S will playback almost any kind of recorded 1/4 inch tapes, including 4-track/4-channel, 4-track/2-channel, 4-track/monophonic, 2-track stereo, 2-track monophonic and a full track monophonic. Use the Basic Playback Procedures below but modify it according to the instructions in the chart listed on next page.

The A-3340S can be used as a conventional 4-track/2-channel tape deck. For that purpose place the PLAY switch to 2CHAN and record using channels 1 and 3 (FRONT) only. The RECORD MODE switches for channels 2 and 4 should be left OFF, and the OUTPUT level controls and MIC/LINE input controls for channels 2 and 4 reduced to MIN.

Preset functions & switches

Switches	Common setup in 4-CH/Playback	4-CH Recording specified
	Load the tape and reels	
SIMUL-SYNC	NORMAL	
Index Counter	0000	
Tape SPEED	to match pre-recorded tape	as desired
REEL size,	to match size being used	
All controls	MIN.	except OUTPUT: 3 o'clock position
OUTPUT (monitor) switches	TAPE	SOURCE/TAPE
PLAY selector	4-CH	4-CH
RECORD EQ & BIAS	have no effect for playback mode	1 for low noise type, 2 for conventional
RECORD MODE	all OFF	all ON

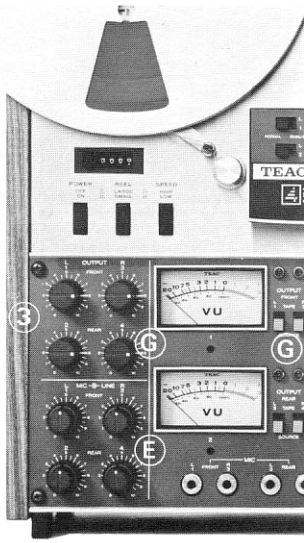
PRE-RECORDED TAPE	PLAYBACK STEPS	PLAYBACK TRACK	OUTPUT LEVEL CONTROL F 1	F 3	R 2	R 4	OUTPUT SWITCH T = TAPE F 1	F 3	R 2	R 4	PLAY SWITCH 2CHAN	PLAY SWITCH 4CHAN	HEAD PHONE F	HEAD PHONE R	VU METER F 1	VU METER F 3	VU METER R 2	VU METER R 4
4TRACK 4CHANNEL	1	1,3 2,4	○	○	○	○	T	T	T	T		○	○	○	○	○	○	○
4TRACK 2CHANNEL	1	1,3	○	○			T	T			○		○		○	○		
	2	2,4	○	○			T	T			○		○		○	○		
4TRACK MONOPHONIC	1	1	○				T				○		○		○			
	2	4	○				T				○		○		○			
	3	3		○				T			○		○			○		
	4	2		○				T			○		○			○		
2TRACK (HALF TRACK) (mono)	1	1	○				T				○		○		○			
	2	2	○				T				○		○		○			
2TRACK 2CHANNEL	1	1,3	○	○			T	T			○		○		○	○		
FULL TRACK	1	1	○	○			T	T			○		○		○	○		

Monophonic recordings will be heard only from one Front speaker, the side depending upon the track being played.

When there is more than one step numbered in the playback steps column, you must change the full reel of tape from the right to the left side before beginning the next step.

A two-channel stereo amplifier is satisfactory for all except 4-Track/4-Channel playback.

When the 2CHAN/4CHAN selector switch is in the 2Chan position the rear channel VU meters are inoperative and there will be no line output for the rear channels (L2 and R4), however, you can still monitor the sounds at the rear channels headphone output.



Basic playback procedure

Playback

Reduce also the volume controls on your amplifier or receiver to minimum to avoid sudden loud sounds when tape playback is begun.

① Rotate the right side reel counter-clockwise by hand to remove the slack (looseness) from the tape, raising the shut-off arm.

② Depress the ► button for playback to begin. OUTPUT switch – TAPE

③ Adjust the OUTPUT level controls individually for each channel while observing the related VU level meter. The loudest passages of music should reach but not exceed a 0 VU readings.

④ Control the listening level by the Volume controls on your 4-channel stereo amplifier.

⑤ After completing all audio adjustments on the deck and the amplifier (tone, balance, filter etc.), you may rewind the tape to 0000 and listen again from the beginning.

peration

The recording procedures should be the same as given under "4 Channel Stereo Record Procedures" except you will delete all references to channels 2 and 4, as explained above. The chart below outlines basic switch and control functions for the various recording formats possible with the A-3340S. Use it in conjunction with the basic procedures and information given here and elsewhere. For more complete procedures on SIMUL-SYNC recording, see the section following this chart. Note the following points.

* Keep the OUTPUT, MIC and LINE level controls to MIN unless the chart indicates their use.
* A two-channel stereo source is satisfactory for all except 4-track/4-channel simultaneous recording.
* Use headphones when recording with microphones to prevent feedback squeals or howls in the recording.
* When there is more than one step numbered in the record steps column below, you must change the full reel of tape from the right to the left Reel Table between steps.

Keep the OUTPUT level controls to minimum unless the o marks indicate they are to be used.

Keep the OUTPUT selector switches to SOURCE unless the **T** indicates they are to be set for TAPE.

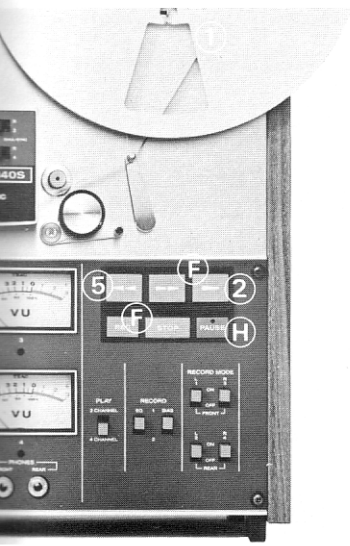
See the recording track configurations chart in the Open Reel Information Supplement to compare track locations and compatibility between different recording and playback formats.

Consult page 6 in the Open Reel Tape Deck Supplement for the various standard recording formats.

RECORDING PROCEDURES and SWITCH SETTING CHART

O = SW IS USED
F = FRONT
R = REAR

BLANK TAPE	RECORD STEPS	RECORD TRACK	LEVEL CONTROLS: MIC F 1	MIC F 3	MIC F 2	MIC F 4	LINE F 1	LINE F 3	LINE R 2	LINE R 4	OUTPUT F 1	OUTPUT F 3	OUTPUT R 2	OUTPUT R 4	SWITCHES: SIMUL-SYNC N=NORMAL S=SIMUL-SYNC 1	3	2	4	RECORD MODE F 1	F 3	R 2	R 4	OUTPUT F 1	F 3	R 2	R 4	PLAY CHANNEL 2CHAN	4CHAN	VU METER F 1	F 3	R 2	R 4	HEAD PHONE F	R
4 TRACK 4 CHANNEL	1	1·3 2·4	○	○	○	○	○	○	○	○	○	○	○	○	N	N	N	N	ON	ON	ON	ON	S/T	S/T	S/T	S/T		○	○	○	○	○	○	○	○
4 TRACK 2 CHANNEL	1	1·3	○	○			○	○			○	○			N	N			ON	ON	OFF	OFF	S/T	S/T			○		○	○			○	
	2	4·2	○	○			○	○			○	○			N	N			ON	ON	OFF	OFF	S/T	S/T			○		○	○			○	
4 TRACK MONO PHONIC	1	1	○				○				○				N				ON	OFF	OFF	OFF	S/T				○		○				○	
	2	4	○				○				○				N				ON	OFF	OFF	OFF	S/T				○		○				○	
	3	3		○				○				○				N			OFF	ON	OFF	OFF		S/T			○			○			○	
	4	2		○				○				○				N			OFF	ON	OFF	OFF		S/T			○			○			○	
SIMUL-SYNC (4 TRACK)	1	1	○				○				○				N				ON	OFF	OFF	OFF	S/T					○	○				○	
	2	2			○				○		○		○		S		N		OFF	OFF	ON	OFF	T		S			○	○		○		○	
	3	3		○				○			○	○	○		S	N	S		OFF	ON	OFF	OFF	T	S	T			○	○	○	○		○ or ○	
	4	4				○				○	○	○	○	○	S	S	S	N	OFF	OFF	OFF	ON	T	T	T	S		○	○	○	○	○	○ or ○	



4-Channel stereo record procedure

Recording

Ⓐ Verify the correct connections with your LINE IN source. Check the positioning of your microphones (as appropriate).

Ⓑ Prepare the 4-Channel amplifier or integrated receiver for a discrete 4-channel recording output according to its Manual of instructions.

Ⓒ Use headphones for minitoring a live recording to prevent feed back squeals or howls.

Ⓓ Start the line or microphone source program. Play or perform the loudest passages which will be encountered in the recording.

Ⓔ At the loudest parts, increase the MIC or LINE input level controls while watching the VU meter indications one channel at a time. Set the controls so that peak signals reach but do not exceed 0 VU. Repeat this procedure for each channel balance and leave the controls at their established settings.

Ⓕ Depress the REC and ► buttons, holding them both down until the red Record indicator lamps located between the level meters illuminate and tape travel begins.

Ⓖ While recording, switch the OUTPUT selector switches to TAPE and adjust the OUTPUT level controls one at a time until each channel indicates approximately the same between SOURCE and TAPE monitoring positions. Leave the switches in the TAPE position unless special recording techniques apply.

Ⓗ Use the PAUSE control for setting up precisely the recording levels or momentary interruptions. The STOP button will disengage the Record mode when you finish recording.

4-track/4-channel Simul-Sync recording

Discrete, separate channels are recorded on each of the four tracks in the same direction and synchronized as in 2-channel stereo recordings. From a 4-channel source, the tracks are recorded simultaneously. With the Simul-Sync function, they may be recorded separately and synchronized at the time of recording. The design considerations for the record and playback heads are somewhat different, especially the optimum head gap. Therefore, when the normal record head is used for reproduction as is done when the Simul-Sync position is selected, the reproduced signal will be of a poorer quality than when the properly designed reproduce head is being used (NORMAL position selected). For this reason, do not judge the quality of the actual sound on the tape by the sound from the Simul-Sync monitor function.

Except the following, the preliminary setting is all the same with steps listed on next page.

1) Channel L-1 OUTPUT level control to the 3 o'clock position, all others to MIN.

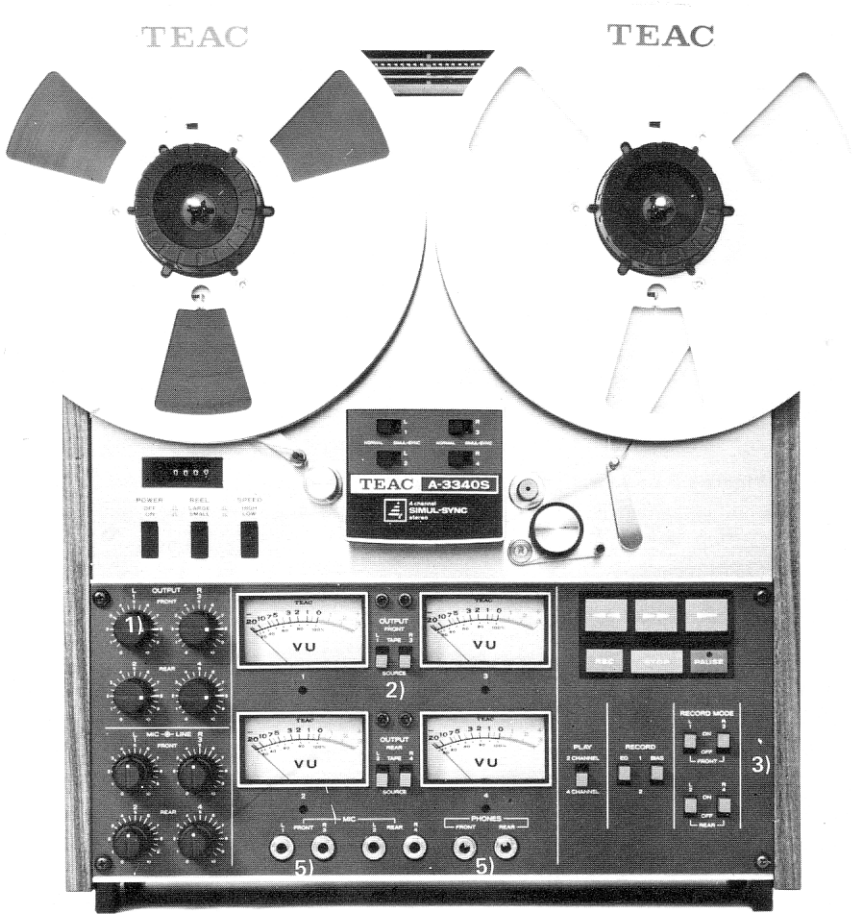
2) All OUTPUT selector switches for SOURCE monitoring.

3) RECORD MODE switches OFF for all channels **except channel L-1 = ON.**

4) Verify the correct connections with your LINE IN sources and/or check the positioning of your microphones as appropriate.

5) Connect the microphone to the MIC input #1.

Use headphones connected to the FRONT PHONES jack for live recording monitor.



4 Track/4 Channel SIMUL SYNC Recording Chart

O = SW IS USED
F = FRONT
R = REAR
SWITCHES
S = SOURCE
T = TAPE

BLANK TAPE			LEVEL CONTROLS												SIMUL-SYNC N= NORMAL S = SIMUL-SYNC				RECORD MODE				OUTPUT				PLAY CHANNEL		VU METER				HEAD PHONE	
			MIC				LINE				OUTPUT								F		R		F		R				F		R			
			F		R		F		R		F		R																					
			1	3	2	4	1	3	2	4	1	3	2	4	1	3	2	4	1	3	2	4	1	3	2	4	2CHAN	4CHAN	1	3	2	4	F	R
SIMUL-SYNC (4 TRACK)	1	1	○				○				○				N				ON	OFF	OFF	OFF						○	○				○	
	2	2			○				○		○		○		S		N		OFF	OFF	ON	OFF	T		S			○	○		○		○	
	3	3		○				○			○	○	○		S	N	S		OFF	ON	OFF	OFF	T	S	T			○	○	○	○		○ or ○	
	4	4				○				○	○	○	○	○	S	S	S	N	OFF	OFF	OFF	ON	T	T	T	S		○	○	○	○	○	○ or ○	

Setting the recording level

*Begin recording with the MIC or LINE input level controls at the 12 o'clock position or below. If the input is only from microphones, keep the LINE controls fully to MIN. If only LINE inputs are used, keep the MIC controls fully to MIN.

*Gradually raise the level by turning the controls clockwise while observing the meters. Remember to use the OUTPUT monitor switch in the SOURCE position.

*Stop raising the level when each channel indicates slightly over 0 VU on the loudest passages.

*If there is more than 1 or 2 VU difference between channels, increase the low-reading channel to the same level. Balance the channels to the same peak reference levels.

*Generally speaking, you should not reset the level unless the meters indicate too low or too high:

*After changing records or sources, the level should be reset.

*During a selection, if the meter goes excessively into the red area, the level should be reset and the recording should be restarted using the new level setting.

*While monitoring off the tape during recording, the level should be raised if soft, quieter passages are covered by tape hiss.

*If you must reduce or change the level while recording, move the controls slowly and gradually to prevent sudden changes in the recording. These changes would be heard as an annoying jump or drop during playback.

*These three things must be avoided:

1) Do not let the meter pointers bounce or stick against the peg on the right side.

2) Tape saturation distortion will be unpleasant to the listeners.

3) Too low a level will be unpleasantly noisy.

Featured CUE function

Editing is one of the most enjoyable facets of tape recording because you can modify, rearrange, add to and delete material from the original recording. Skillful editing can make your recordings livelier and more dramatic. To do this, the creative recordist should master some basic skills, such as splicing and cueing. Some special "tools" are needed to do a good job, for example, a good splicing tape, non-magnetic scissors and a marker pen (non-solvent type) to mark the tape. Leader tape and timing tape are also useful. Editing, as discussed in this section, consists of cutting out unwanted sections of the tape. Cueing, to locate the desired material on the tape, is an important first step.

1. Load and thread tape. Engage the FAST FORWARD mode. Push up CUE lever and hold until you hear a "squawk" on tape indicating the presence of a recorded signal.
2. Stop tape. Tape will stop close to but past the place where you press the STOP button.
3. Push the CUE lever up all the way until it locks up. The tape will be close to playback head.
4. Move tape back and forth by turning the reels by hand until you precisely locate the desired recording.
5. Mark start of recording by making a mark with a felt pen or dermatograph on the tape under the track playback head.
6. Advance tape and mark the end of the section of the tape you want removed (the same procedure as above).

Note:

ALWAYS RELEASE THE CUE LEVER BACK TO THE NORMAL POSITION AFTER MARKING IS FINISHED, BY PUSHING THEN RELEASING THE LEVER.

Punch-in recording or "running splice"

(Instant PLAY-to-RECORD mode change)

During playback, if MODE select switches are in RECORD mode, you can instantly change to recording by depressing the RECORD button and ► button simultaneously. Tape travel will not be interrupted, thus avoiding the stop mode.

This method permits very smooth recording starts, avoiding tape bounce (and resultant problems), and is especially convenient for electronic editing.

Live recording

High quality recordings begin with high quality microphones. The TEAC A-3340S will perform excellent live recordings from any high quality microphones (i.e., such as TEAC's MC-201) with impedances from 600 to 10,000 ohms. Low impedance microphones of 150 – 600 ohms will also work satisfactorily.

1) Connect the microphones to the MIC input jacks on the front panel.

2) Use headphones for monitoring to prevent feed-back from developing whistles or squeels in the recording (howling).

3) Select OUTPUT (monitor) – SOURCE.

4) Reduce the LINE level controls to MIN.

5) Adjust the MIC level controls for the proper recording level on the VU meters.

6) Other recording procedures are the same as Recording procedures on page 7.

7) Use the PAUSE control during interruptions in the recording.

Note: Experimentation, experience and extensive study will be required before you can duplicate the accomplishments of a professional studio recording. Microphone selection, placement of the microphones, and the room acoustics must all be considered in addition to recording levels and special techniques.

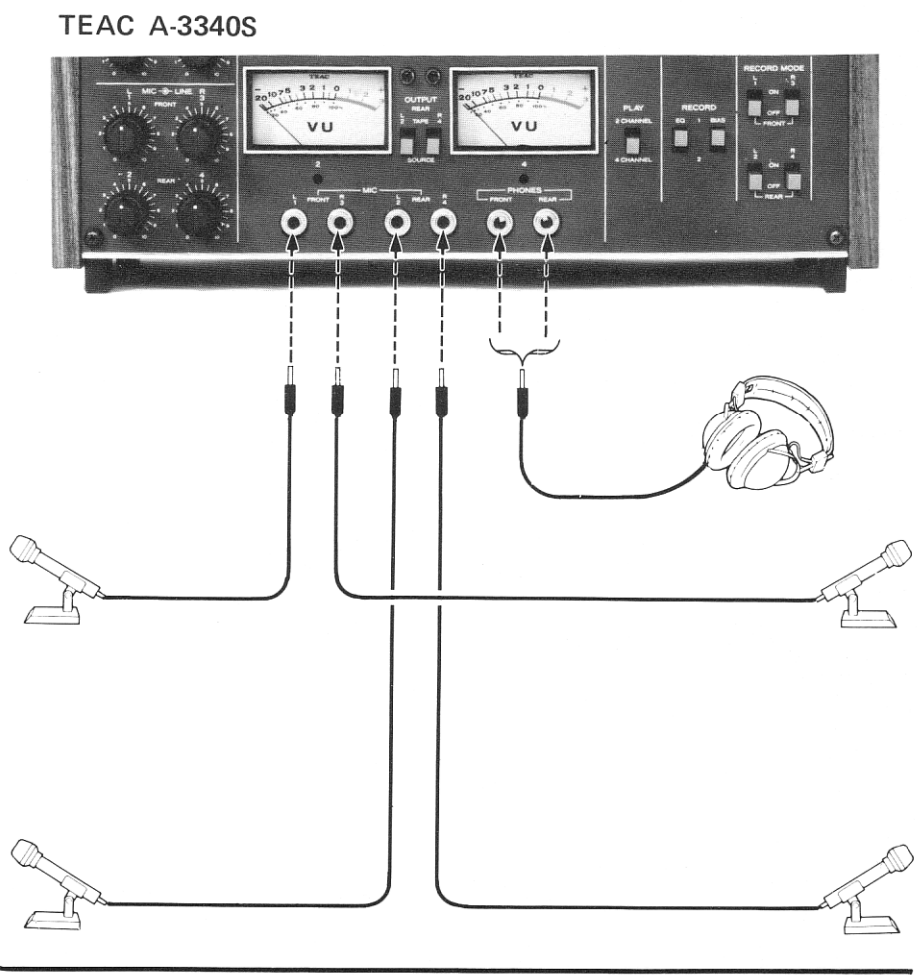
MIC/LINE mixing

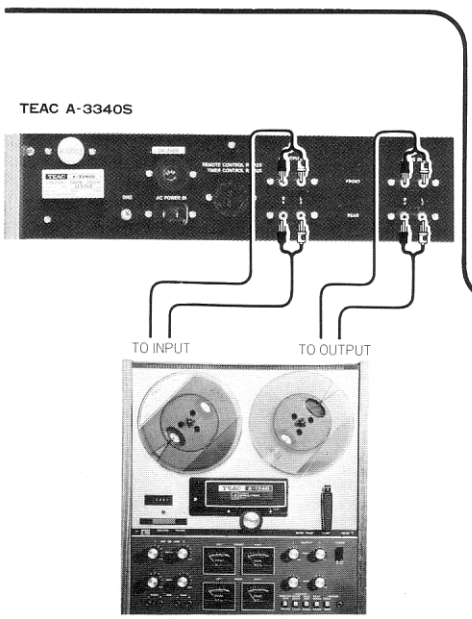
You may add your commentary to a musical recording, add music background to a live recording, and perform many other interesting recording effects by combining the procedures for Live recording with microphones and the Standard recording procedures for Line inputs. Connect the microphones to the MIC jacks on the front of the deck. Consider these following points while recording.

1) The use of headphones is recommended to prevent feedback squeals and whistles.

2) Use the SOURCE selection of the OUTPUT switches to simplify synchronization of the MIC and LINE inputs.

3) Adjust the MIC and the LINE level controls to balance the relative levels between the separate inputs while keeping the total input level within the limitations indicated by the VU meters.





Recording directly from a source

Almost any standard audio component may be connected from its output to the LINE IN jacks of the A-3340S with the following exceptions.

*Never connect the speaker output of any amplifier to the deck.

*Turntable and phonograph outputs need special amplification and equalization from an amplifier before they can be recorded.

*DIN cords are not useable with the A-3340S.

*Electrical pickups for musical instruments, electric guitars and electronic organs are generally unacceptable directly.

Check with your dealer or the unit's instruction manual before attempting to record directly from these sources.

Playback of the Dolby-encoded tapes

To enjoy the benefits of the Dolby Noise Reduction System, both recording and playback levels must be matched. Therefore, "Dolby-encoded", "Dolby processed", or "Dolbyized" tapes must be played back through a properly calibrated Dolby Noise Reduction unit, i.e., available from TEAC (AN series units) or other companies.

Please note these points about Dolby NR and A-3340S. **1)** The Dolby NR system is not a filter and will not eliminate noise present in the original source, such as scratches or clicks. **2)** Improvements in recording tape itself (such as low noise/high output tape) have significantly reduced the inherent tape noise level. Although the Dolby NR system is still contributing to an improved signal to noise ratio when using these tapes, the advantage of the system may not be so readily apparent. **3)** TEAC has developed a 4-channel Dolby NR unit, the AN-300 (optional) which is especially designed for 4-channel stereo recording and playback. It is also ideal for 2-channel stereo use.

Making Copies from TEAC A-3340S

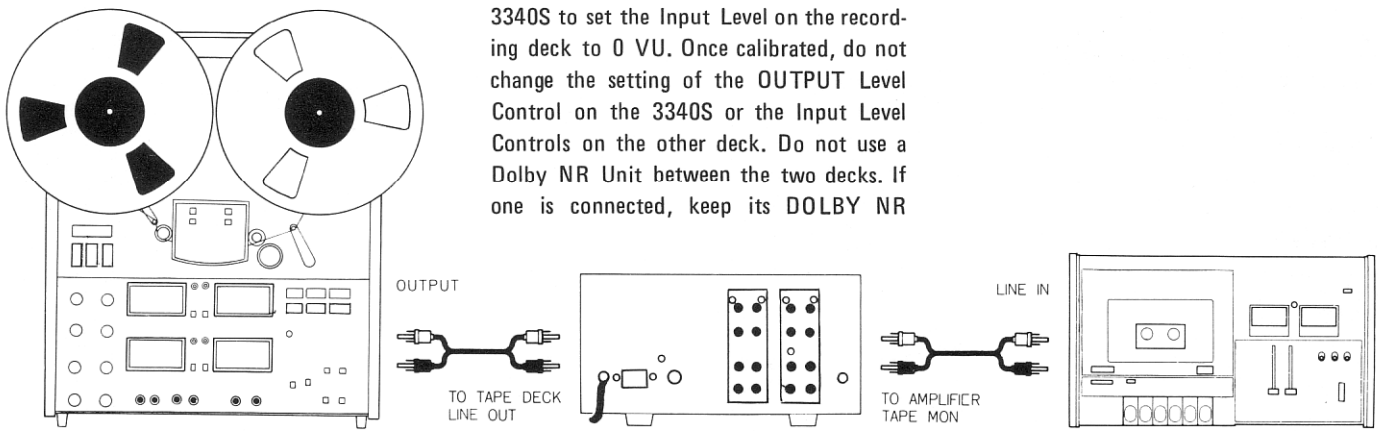
Here are some guidelines for avoiding noise build-up and other problems.

1) Use the highest recording levels possible without exceeding the saturation points of 0 VU or +3 VU. Set the playback level first so that it does not exceed the reference. Then set the recording level using source monitor to exactly the same VU readings.

2) Before copying Dolby-processed tape, use the Dolby Level Calibration Tape to set the playback output level on the 3340S. Then replay the Calibration tape on the 3340S to set the Input Level on the recording deck to 0 VU. Once calibrated, do not change the setting of the OUTPUT Level Control on the 3340S or the Input Level Controls on the other deck. Do not use a Dolby NR Unit between the two decks. If one is connected, keep its DOLBY NR switch to the OUT position.

3) When making Dolbyized copies onto a cassette from the 3340S, record level differences prevent accurate Dolby Level calibration between the decks. Use a separate Dolby NR Unit between the decks, place its Dolby NR switch IN, and select the playback mode. Have the built-in Dolby system on the cassette deck reprocess the program while recording. Only 2-channel copying is possible.

4) To make 2-channel copies of a 4-channel recording, it is recommended that you use a Mixdown Panel or Audio Mixer to establish the desired balance without losing the required output level from each channel. TEAC's optional accessories designed for this purpose include the AX-20 Mixdown Panel and the AX-300 Audio Mixer, both capable of the proper mixing action.

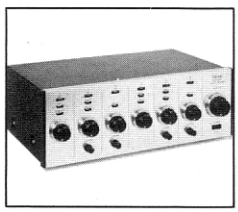


TEAC A-3340S — **TEAC AN-300** DOLBY NOISE REDUCTION UNIT — **CASSETTE DECK**

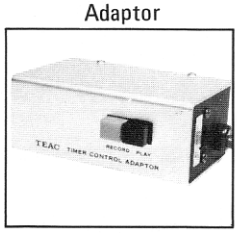
* "DOLBY" and the Double D symbol "DD" are trademarks of Dolby Laboratories, Inc.

Optional Accessories

AX-300
Audio Mixer



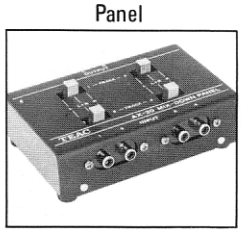
RC-320
Timer Control Adaptor



RC-120
Remote Control Unit

AX-10
Sound on Sound Echo Unit

AX-20
Mix Down Panel



SPECIFICATIONS

Track System	4 Track Multi channel (with SIMUL-SYNC switch)
Heads	Three; erase, record and playback
Reel Size	10-1/2" and 7"
Tape Speed	15 ips and 7-1/2 ips (±0.5%)
Motors	1 dual speed hysteresis synchronous capstan motor 2 eddy current induction reel motors
Wow and Flutter (NAB weighted)	0.04% at 15 ips 0.06% at 7-1/2 ips
Frequency Response (Overall)	25–24,000 Hz (±3dB, 30–22,000 Hz) at 15 ips 25–22,000 Hz (±3dB, 30–20,000 Hz) at 7-1/2 ips
Signal to Noise Ratio	55 dB (Overall)
Harmonic Distortion	1% at 1,000 Hz normal operating level (Overall)
Stereo Channel Separation	55 dB at 1,000 Hz
Fast Winding Time	140 seconds for 1,800 feet
Inputs	Line : 0.1 V, 50,000 ohms Microphone : 0.25 mV/–72 dB (600–10,000 ohms)
Outputs	Line : 0.775 V for load impedance of 10,000 ohms or more Headphones : 8–400 ohms
Power Requirement	117 V AC, 60 Hz, 138 W
Dimensions	17-3/8"(W) x 20-1/2"(H) x 8-3/4"(D)
Weight	50 lbs. net
Standard Accessories	Empty reel, Reel clamp adapter (TZ-612), Input-output connection cord, Oil, Cleaning stick applicator, Silicone cloth, Rubber feet, Splicing tape

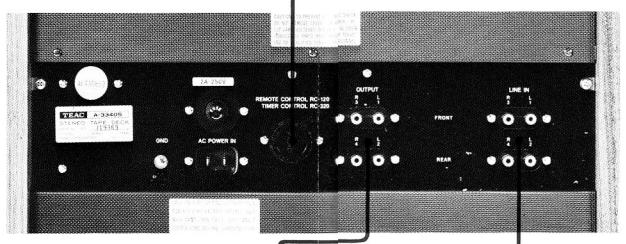
* Specifications were determined using low noise tape.
* Feature and specifications are subject to change without notice.
* Photographs and/or illustrations may differ slightly from the appearance of your unit when production design improvements are incorporated.

GND terminal
For connecting a grounding wire between components or to earth ground if necessary to eliminate electrical hum/noises.

FUSE holder
Contains a 2 amp. fuse for overload protection.

AC POWER IN socket
Connect the electric power cord here.

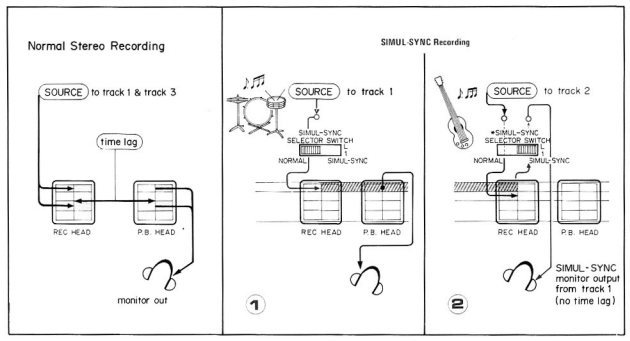
REMOTE/TIMER CONTROL connector (dummy plug)
(Remote control RC-120, Timer control RC-320). Unless one of the two optional accessories is connected here, this dummy plug must be inserted to permit proper operation of the tape transport.



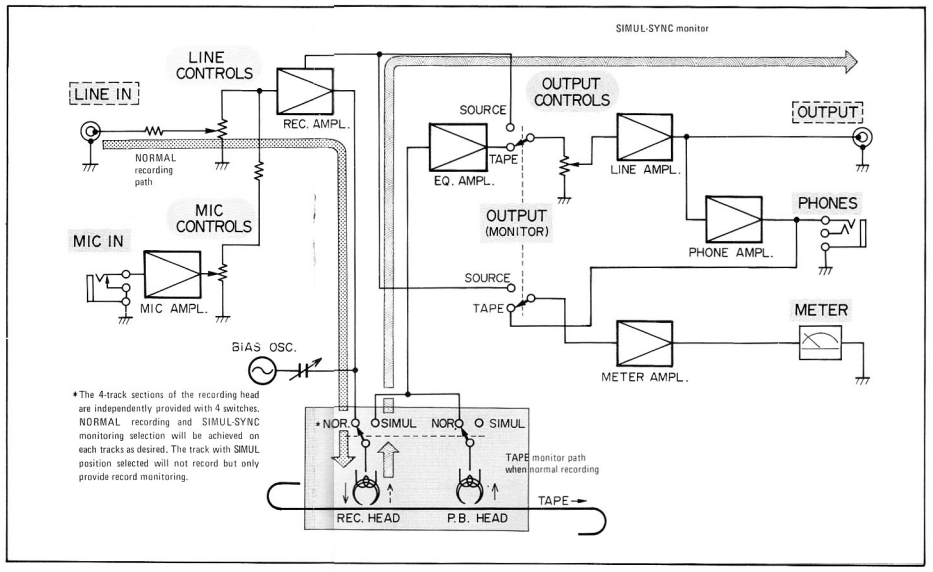
OUTPUT jacks
Connect to the discrete inputs of a 4-channel amplifier or two 2-channel amplifiers. Notice that the channel designation corresponds with the VU meters and level controls when viewed from the front of the deck.

LINE IN jacks
Line inputs for recording are connected to these four pin cord jacks.
Two pairs of the pin cord connectors are included Standard Accessories.

SIMUL-SYNC monitor switches
The Simul-Sync switches should always be left in the NORMAL position unless you wish to synchronize the recording of a new track with one already recorded. These switches effectively convert the selected recording heads into the playback monitor heads whenever switched to SIMUL-SYNC position with the corresponding OUTPUT selector switch also positioned to TAPE. When the Simul-Sync position is selected, that channel cannot be recorded as a safety device prevents unwanted recording. The design considerations for the record and playback heads are somewhat different, especially the optimum head gap. Therefore, when the normal record head is used for reproduction as is done when the Simul-Sync position is selected, the reproduced signal will be of a poorer quality than when the properly designed reproduce head is being used. For this reason, do not judge the quality of the actual sound on the tape by the sound from the Simul-Sync monitor function.



Block Diagram



Head housing
Protects the heads and SIMUL-SYNC switches from dust and damage or electrical noises.

Capstan
Drives the tape at a constant speed in the Play or Record modes. Not engaged with the Pinch roller during Fast Forward or Rewind modes, but rotation continues until electrical power is removed from the transport.

Pinch roller
Applies proper pressure for the tape to be driven by the capstan. Engaged only in the Play and Record modes.

Shut-off arm
Removes electrical power from the transport section if the tape breaks or ends. Also provides tape guidance.

CUE lever
Push up on the CUE lever to monitor the signal on the tape during high speed tape movement. Release the CUE lever when this function is not being used to avoid unnecessary wear on the heads.

Tape guide post

POWER switch
Depress to apply power, VU meter lamps will illuminate as selected by the PLAY switch. Push again for OFF.

REEL size selector switch
The REEL SIZE selector switch must be set to the proper position corresponding with the size of the reel:
LARGE for 10-1/2" reels,
SMALL for 7" reels.
This switch prepares the transport for the proper back-tension, take-up torque and braking which differ between the reel sizes. Improper REEL SIZE selection will result in excess tape tension and possibly tape breakage for small reels. With 10-1/2" reels, SMALL size selection will cause recording dropouts. With either error, the tape-to-head pressure will be incorrect.

Tape tension arm
Acts as a mechanical filter with the Tape Guide Post to maintain proper tape tension.

Counter reset button
Restores counter digits to 0000.

Index counter
Indicates relative location of selections on the tape.

TAPE SPEED selector switch
Control of the tape speed is provided for the two common recording speeds:
15 ips (38 cm/s) and
7-1/2 ips (19 cm/s).
The slower speed will give you twice the time from a reel of tape as the faster speed, but with a very slight decrease in performance as indicated in the specifications.
The SPEED selector switch selects 7-1/2 ips when depressed to the (▭) position. A second push will release it back to the 15 ips speed (▭).

Features and Controls

QUIK-LOK reel holders
Firmly hold the tape reels to the Reel Tables.

Reel tables
Provide a platform for the tape reels.

OUTPUT (monitor) selector
The 4 switches located between the VU meters are called the OUTPUT selector switches for they select which output signals will be applied (can also be monitored through headphones) to the OUTPUT jacks on the rear of the deck. They also select which signal will be displayed on the VU meters. In both cases, the selection is between TAPE and SOURCE. TAPE refers to the signal which has already been recorded onto the tape. This signal is obtained from the playback head when the SIMUL-SYNC switch is NORMAL, and from the record head in SIMUL-SYNC. The SOURCE position obtains the selected signal from the recording amplifier at the point in the circuit before it is applied to the recording heads. Thus it gives an accurate indication of the strength of the signal being recorded onto the tape. You will notice that each channel has its own OUTPUT switch, which is an advantage over conventional 2-channel decks, for you may select the desired type of monitor, TAPE or SOURCE independently for each channel.
Tape monitoring is important while recording to verify the final quality of your recording. While SOURCE monitor will tell you exactly what is going into the recorder, only tape monitoring will let you hear exactly what you have recorded.
It warns you if the heads have become dirty or magnetized, or misaligned; and generally confirms for you that you are making a high quality recording.
Always set the OUTPUT switch to SOURCE when you make the initial recording level settings with the MIC or LINE input level controls. The VU meters will then display the input signal, and they will be controlled by the LINE input controls. Once the level has been set, set the desired OUTPUT switch(es) in the TAPE position(s) and adjust the OUTPUT controls to obtain the same reading as the input levels. Alternate between the SOURCE and TAPE position to compare the quality of the sound through headphones or your stereo speakers.
When using the Simul-Sync function, there are exceptions to the above. First, the basic channel that is using the SIMUL-SYNC switch position must have the TAPE monitor position selected on its OUTPUT switch. This is because you are not recording on that channel but you wish to hear the channel as in playback. Second, for perfect synchronization, maintain the SOURCE position on the remaining channels' OUTPUT switches. This will avoid the slight time lag inherent with normal TAPE monitoring.

Record indicator lights
Illuminate when the associated channel is in the Record mode.

VU meters
Provide individual channel monitoring during recording or playback. VU meter placement corresponds with the OUTPUT and input level controls and with standard mic and speaker geometry for 4 channel recording and playback.

PHONES jacks: FRONT – REAR
Jacks for 8 ohm stereo headphones, one for the FRONT two channels (1 & 3), another for the REAR channels (2 & 4).

FRONT- MIC- REAR: Microphone input jack
For standard microphones, high impedances (600 to 10,000 ohms). Also mics with impedance of 150 to 600 ohms may be used.

MIC/LINE input level controls
Dual concentric knobs controlling the recording input level. The front, center-section of each knob is for MIC inputs. The rear, outer section of each knob is for LINE inputs.

Tape Transport Control Center

Tape movement and operating controls
- ► **FORWARD PLAY**– starts forward playback.
- STOP **STOP**– stops tape movement, releases deck from RECORD or PAUSE mode and stops any control function.
- ►► **FAST FORWARD**– starts fast forward movement.
- ◄◄ **REWIND**– starts tape in high speed reverse direction.
- REC ► **RECORD**– if you push these two switches while RECORD MODE switch(es) are ON, REC indicator will illuminate and deck begins recording.
- REC PAUSE **RECORD/PAUSE**– without moving tape, record electronics are activated. RECORD and PAUSE indicator lamps illuminate. When forward button ► is pressed, deck begins recording.

PAUSE control button operation
Recording is greatly simplified by using the PAUSE button rather than the STOP when you wish to temporarily halt the tape transport. The PAUSE mode is engaged by depressing the PAUSE button while recording to keep the deck's recording circuits engaged. Recording is instantly restored by merely pushing the ► (Play) button.
Use the PAUSE functions:
* to eliminate commercials when recording from the radio;
* to eliminate interruptions in the recording during live recording or those caused by changing discs;
* for keeping switch noises or needle clicks out of the recording;
* anytime you wish to momentarily stop recording.
If the STOP button is used rather than the PAUSE, you must depress both the REC and the ► (Play) buttons to resume recording. During tape playback, the PAUSE functions only to stop the transport in the same manner as the STOP button does.

PLAY (2CHAN/4CHAN) switch
Controls line outputs and VU meters. In 2Chan position rear channel VU meters are inoperative during REC and PLAY operation and no signal will appear at the rear channel output terminals (R4 and L2). Switch does not affect the actual record operation. All 4 channels may be monitored at the headphone jacks and the channels recorded will depend on the setting of the RECORD-MODE switches. In 4Chan position all 4 VU meters appear at the line output jacks.

EQ & BIAS

Many of the tape formulations available have differing bias and equalization requirements which must be considered independently as explained below.

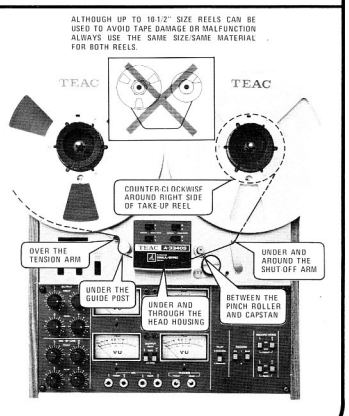
The TEAC A-3340S has special circuitry for these new low noise/high output tapes as well as other circuitry for the low noise tapes. The best match is selected by the RECORD EQ and BIAS switches.

RECORD EQ
To get flat frequency response, wider dynamic range and the best S/N ratio possible, set RECORD EQ switch to match the tape you are using according to this chart.

RECORD BIAS
The amount of AC bias applied to a tape with the input signal during recording also affects the recording fidelity, and such parameters as sensitivity, distortion rate, S/N ratio and frequency response. This BIAS switch should thus be set to match the type of tape you are using according to this chart.

RECOMMENDED SWITCH SETTINGS			
1 mil type (1800 and 3600 ft. reels of tape) for 4 track models		Switch	
BRAND	**TAPE DESIGNATION**	**BIAS**	**EQ**
FUJI FILM MAXELL SONY TDK	FG-150, FB-151 UD-XL-35B, UD-35 LN35 NEW DUAD, SLH Series AUDUA	1	1
AGFA SCOTCH	PE-36 207	1	2
BASF MEMOREX SCOTCH	LP-35LH, LPR-35LH 1800 212, 218	2	1

RECORD MODE switches
There is a separate MODE switch for each channel and this switch must be ON to record on that channel. Separate recording MODE switches are not only a safety feature, but they also make it possible to perform selective recording on any channel you might select. Keep all switches OFF during playback and place a MODE switch ON only if you wish to record on that channel. A safety feature in the SIMUL-SYNC switches prevents recording if a channel has SIMUL-SYNC monitoring selected. You may go directly from playback to record mode if the MODE switch is ON during playback operation. Without depressing the STOP button, while the tape is in motion, hold in the REC button while you depress the play button. The red Record Indicator lamp will illuminate. This is called a "running splice" or "punch-in recording".

Threading the tape

ALTHOUGH UP TO 10-1/2" SIZE REELS CAN BE USED TO AVOID TAPE DAMAGE OR MALFUNCTION ALWAYS USE THE SAME SIZE/SAME MATERIAL FOR BOTH REELS.
TEAC
TEAC
COUNTER-CLOCKWISE AROUND RIGHT SIDE OF TAKE-UP REEL
OVER THE TENSION ARM
UNDER AND AROUND THE SHUT-OFF ARM
UNDER THE GUIDE POST
UNDER AND THROUGH THE HEAD HOUSING
BETWEEN THE PINCH ROLLER AND CAPSTAN

*Carefully **unwind** (pull out) approximately 30 inches (75 cm) of tape from the supply reel. Thread this tape in the following manner: over the left tension arm, under the guide post, under and through the head housing, between the pinch roller and capstan, under and around the right shut-off arm, then onto the take-up reel.
*Secure the end of the tape to the take-up reel by holding the end of the tape in the slot while rotating the reel several turns counter-clockwise (CCW).
*Continue rotating the take-up reel until the tape is no longer loose. Correct tension will raise the shut-off arm from the 3 o'clock position (→) to the 11 o'clock position (↖).